

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (currently amended) A method for improving burst acquisition in a digital communication device comprising:
 - receiving a signal; and
 - performing a sync word search on said signal;wherein said sync word search includes performing a hybrid synchronization technique, said hybrid synchronization technique including both a lower order modulation detection and correlation process, and a higher order modulation detection and correlation process; and
comparing a result from said lower order modulation and correlation process to a result of said higher order modulation and correlation process; and
selectively modifying one or more thresholds associated with said lower order modulation detection and correlation process based on the comparison of the result from said lower order modulation and correlation to the result of said higher order modulation and correlation process to provide a modified lower order modulation and correlation process.
2. (original) The method of claim 1, wherein said lower order modulation detection and correlation process comprises performing a biphase shift keying (BPSK) sync word correlation process.
3. (original) The method of claim 1, wherein said higher order modulation detection and correlation process comprises performing a quadrature phase shift keying (QPSK) sync word correlation process.
4. (currently amended) The method of claim 1, wherein the step of modifying includes further comprising using [[a]]said result of said higher order modulation detection and correlation process to modify [[a]]said one or more detection thresholds result of said lower

order modulation detection and correlation process.

5. canceled.

6. (currently amended) The method of claim 1 [[5]], further comprising: comparing a result from a DBPSK correlation to a result from a CQPSK correlation; and wherein if said result from said higher order modulation and correlation process CQPSK correlation comprises a CQPSK sync word result, using said CQPSK sync word correlation result to demodulate said burst.

7. canceled.

8. (original) The method of claim 1, further comprising performing said lower order modulation detection and correlation process prior to said higher order modulation detection and correlation process.

9. (original) The method of claim 1, further comprising performing a squelching function on said received signal prior to said sync word search.

10. (original) The method of claim 1, wherein said sync word search is not performed until a multi-step burst detection process detects a burst.

11. (previously presented) A method for improving burst detection in a digital receiver device, comprising:

receiving a signal; and

performing a multi-step burst detection process on said signal;

wherein the multi-step detection process further comprises:

measuring a signal energy;

comparing said signal energy to a designated signal energy threshold value;

measuring a signal carrier to noise plus interference ratio (CIR);

comparing said CIR measurement to a designated CIR threshold value; and

signaling a valid burst detection if said signal energy exceeds said designated signal energy threshold value for a first predetermined period of time and said CIR exceeds said designated CIR threshold value for a second predetermined period of time, wherein said first predetermined period of time and said second predetermined period of time comprise a majority of an expected burst duration.

12. (canceled)

13. (previously presented) The method of claim 11, wherein said designated signal energy threshold value comprises a first signal energy threshold that is utilized to detect a presence of said signal if said signal is currently undetected, and a second signal energy threshold that is utilized to detect the absence of said signal if said signal is currently detected.

14. (previously presented) The method of claim 11, wherein said designated CIR threshold value comprises a first CIR threshold that is utilized to detect the presence of said signal if said signal is currently undetected, and a second CIR threshold that is utilized to detect the absence of said signal if said signal is currently detected.

15. (canceled)

16. (currently amended) A digital communications system comprising:
a tuner; and
a demodulator;
wherein said demodulator is configured to receive a signal and perform a hybrid sync word search synchronization technique on said signal, 'said hybrid synchronization technique including both a lower order modulation detection and correlation process, and a higher order modulation detection and correlation process, and said hybrid synchronization technique further includes comparing a result from said lower order modulation and correlation process to a result of said higher order modulation and correlation process, and
wherein said demodulator is configured to selectively modify one or more detection thresholds associated with said lower order modulation detection and correlation process based

on a comparison of results from said lower order modulation and correlation to the results of said higher order modulation and correlation process to provide a modified lower order modulation and correlation process.

17. (original) The digital communications system of claim 16, wherein said lower order modulation detection and correlation process comprises a biphase shift keying (BPSK) sync word correlation process and said higher order modulation detection comprises a quadrature phase shift keying (QPSK) sync word correlation process.

18. canceled.

19. (original) The digital communications system of claim 16, wherein said demodulator is further configured to perform said lower order modulation detection and correlation process prior to said higher order modulation detection and correlation process.

20. (original) The digital communications system of claim 16, wherein said demodulator is further configured to perform a squelching function on said received signal prior to said sync word search.

21. (original) The digital communications system of claim 16, wherein said demodulator is further configured to perform said sync words search only after a multi-step burst detection process detects a burst.

22. (previously presented) A digital communications system comprising:
a tuner; and
a demodulator; wherein said demodulator is configured to receive a signal and perform a multi-step burst detection process on said received signal wherein the multi-step burst detection process further comprises:
measuring a signal energy;
comparing said signal energy to a programmable signal energy threshold value;
measuring a signal carrier to noise plus interference ratio (CIR);

comparing said CIR measurement to a programmable CIR threshold value; and
signaling a valid burst detection if said signal energy exceeds said designated
signal energy threshold value for a first predetermined period of time and said CIR exceeds said
designated CIR threshold value for a second predetermined period of time, wherein said first
predetermined period of time and said second predetermined period of time comprise a majority
of an expected burst duration.

23. (canceled)

24. (previously presented) The digital communications system of claim 22, wherein said
programmable signal energy threshold value comprises a first signal energy threshold that is
utilized to detect a presence of said signal if said signal is currently undetected, and a second
signal energy threshold that is utilized to detect the absence of said signal if said signal is
currently detected.

25. (previously presented) The digital communications system of claim 22, wherein said
programmable CIR threshold value comprises a first CIR threshold that is utilized to detect the
presence of said signal if said signal is currently undetected, and a second CIR threshold that is
utilized to detect the absence of said signal if said signal is currently detected.

26. (canceled)

27. (original) The digital communications system of claim 22, wherein said system comprises
a digital receiver.